Smart Growth:

The Key to Reducing Our Community Energy Needs & Protecting the Climate

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Why Smart Growth Matters

- Today's development decisions determine a community's energy needs for decades.
- Since energy produced today emits pollution with a 100-year atmospheric lifetime.
- Our development choices clearly have long term impacts.

Energy Efficient Communities are better for the economy

- Innovative smart growth practices will reduce a community's future energy consumption and keep more dollars in the local and state economy.

- "Energy smart" decisions that focus on energy efficient neighborhoods (walkable and compact) and efficient buildings in the right places will improve the quality of life.

Why Good Planning is Central to Climate Protection

- Transportation: 1/3 of our GHG emissions in MA
- Miles are increasing by 2.0% per year
- Each gallon of gasoline burned emits 20 pounds of CO2 which lasts in the atmosphere for 100 years.
- Technology changes are essential
  - MA has adopted the California Car Program (Pavley)
- But technology changes alone will not solve the problem long-term (especially if we continue to sprawl)

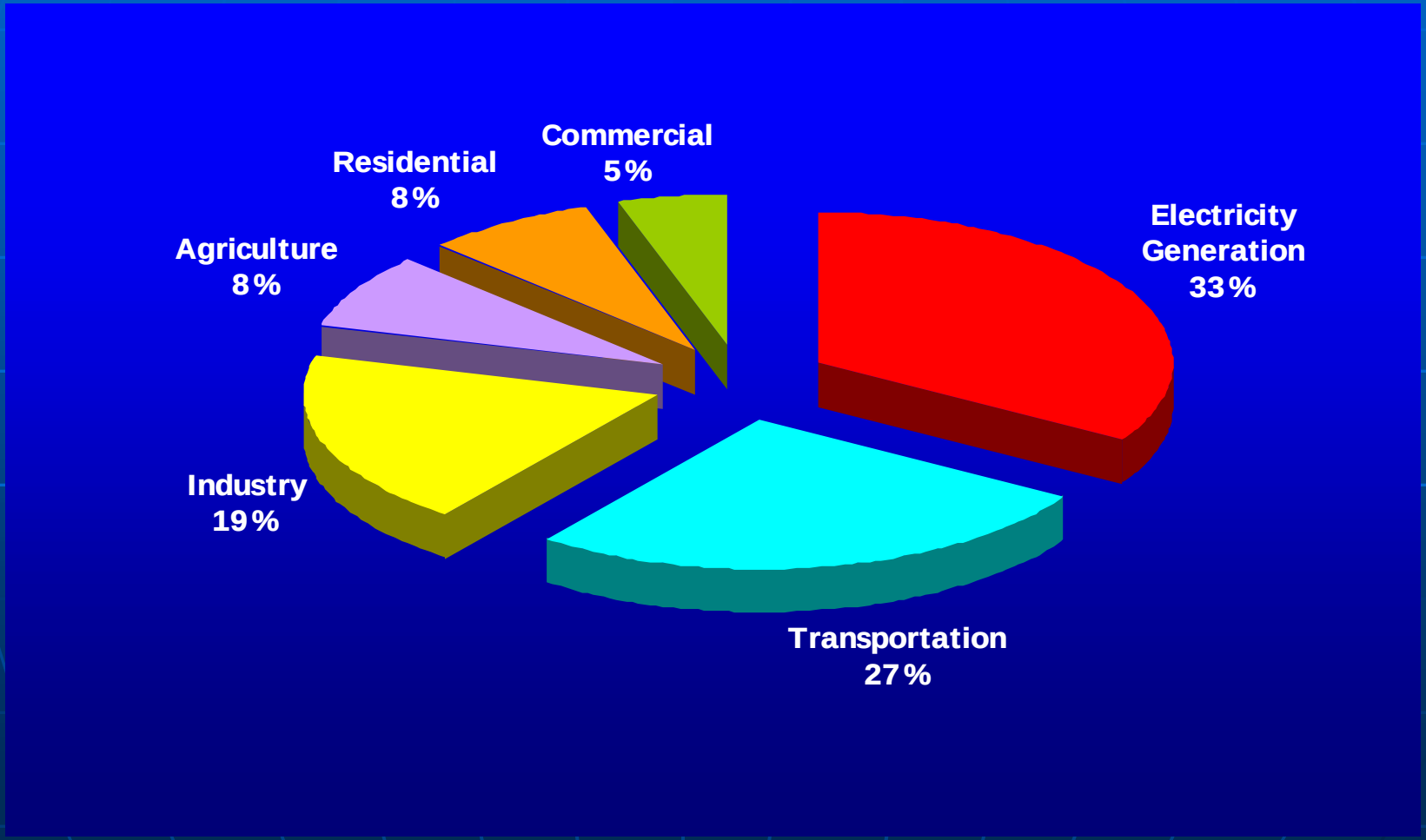
Trends in Massachusetts

- From 1950-1990, our population grew 28% while the developed land area increased 188%, *more than six times the rate of population growth.*
- Between 1990 - 2020, Boston metro-region will see a 24% increase in vehicle miles traveled,
- a 35% increase in total vehicle hours, and
- and a decrease in operating speeds of 5%.

Three Ways to Save Energy and Reduce CO_2 from the Transportation System

- Reducing the carbon intensity of the fuel used (ie. Switching fuels)
- Improving conversion efficiency. (ie. Hybrid Vehicles)
- Reducing the need for the energy in the first place (Conservation)

Greenhouse Gas Sources



Source: US EPA, Inventory of Greenhouse Gas Emissions and Sinks, 1990-2000 (2002)

Greenhouse gases create a blanket that trap heat and warm the earth

Ice is Melting at the Poles

- Alaska's glaciers melted more since 1900 than in the previous ten centuries
- Since 1950, they thinned 20 inches per year; since 1990, they thinned 6 feet per year

Glacial Retreat is Happening Worldwide

Glacier Bay National Park and Reserve's White Thunder Ridge as seen on August 13, 1941 (left) and August 31, 2004 (right). Muir Glacier has retreated out of the field of view, Riggs Glacier has thinned and retreated significantly, and dense new vegetation has appeared. Muir Glacier was more than 2,000 feet thick in 1941.

2004 USGS photo by B. F. Molnia; 1941 photo by W. O. Field.

New Orleans: climate change?


Edgartown, MA
Courtesy of NET


Edgartown, MA
Courtesy of NET

Massachusetts's Temperatures are forecast to rise 6-10°F by 2100

6° increase = Charlotte, North Carolina

10º increase = Atlanta, Georgia

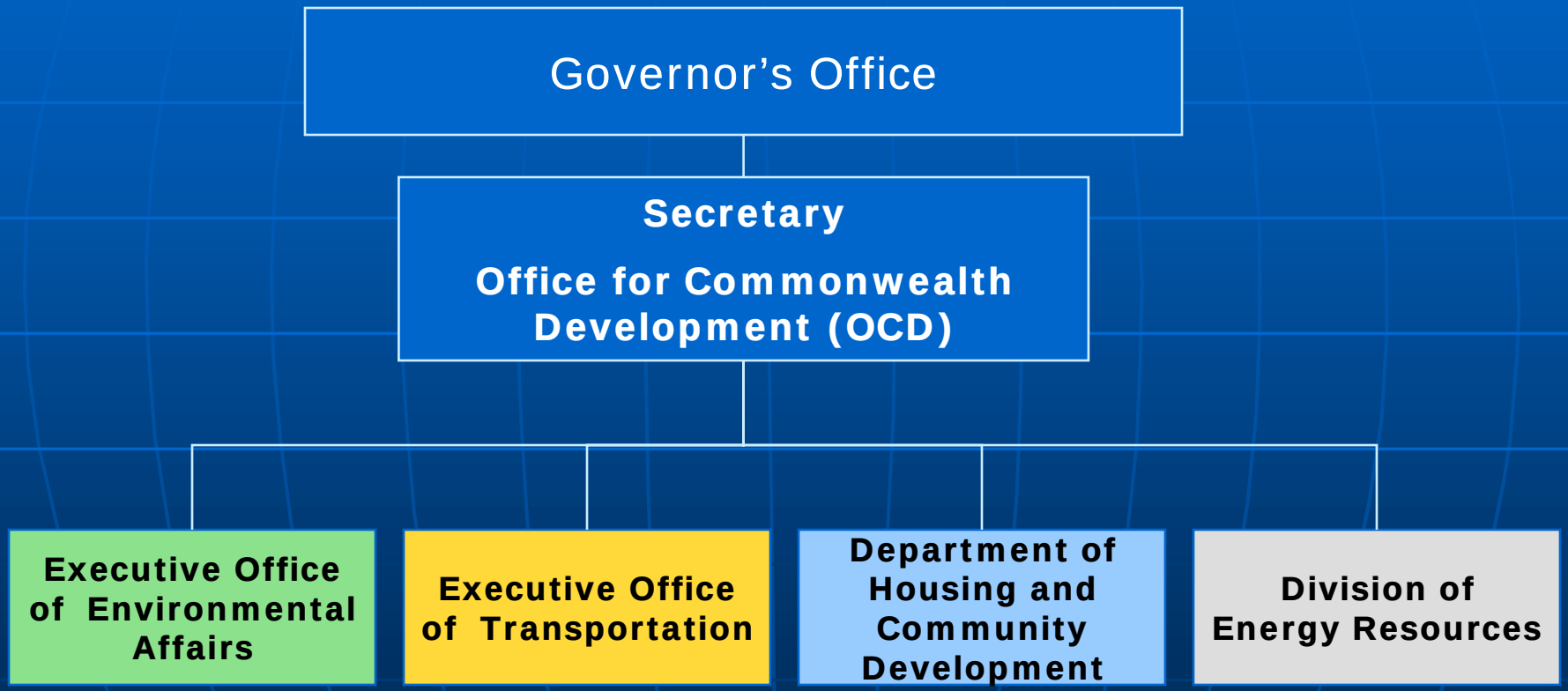
Why Good Planning is Central to Climate Protection

- Sprawl makes providing all essential public services more energy-intensive (school buses, waste pickup, sewers and water pumping, etc.)
- According to current studies, we can reduce future emissions trajectory by 5 - 25% from smart growth & transit improvements and these savings occur year after year
- BUT, these aren't STATE decisions, by and large.

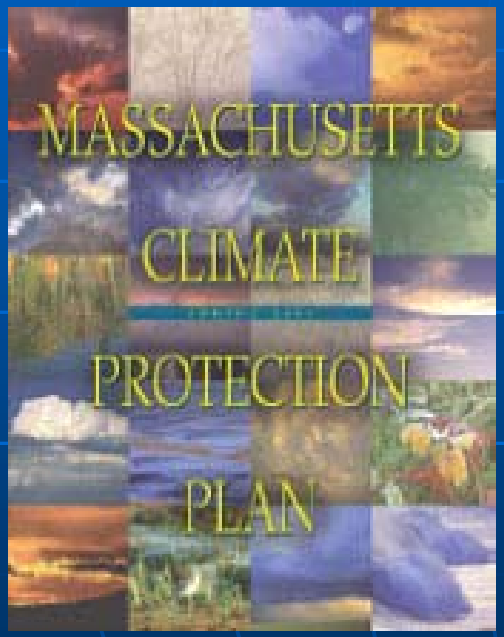
Managing Growth is Difficult

- High Housing Costs
- Long commutes and traffic congestion
- Loss of Farmland and open spaces
- Rising costs for far-flung infrastructure (water, sewer)
- Police, fire, school bus service overextended
- Cost of services outstrip tax revenue
- Strip commercial development to fill the gap
- Uncoordinated state agencies with many policies at cross purposes.

The Office for Commonwealth Development was Created to Help



Use All Levers to Create a Lower Carbon Future



- Sustainable Development Principles: lower embodied energy
- Work with Municipalities to integrate into local plans
- Smart Growth Zoning: genetic engineering for energy efficiency
- Commonwealth Capital: priority funding to lower energy projects
- Fix-It-First: recycle your infrastructure
- Grant Coordination/Smart Growth Criteria
- Interagency Development Teams

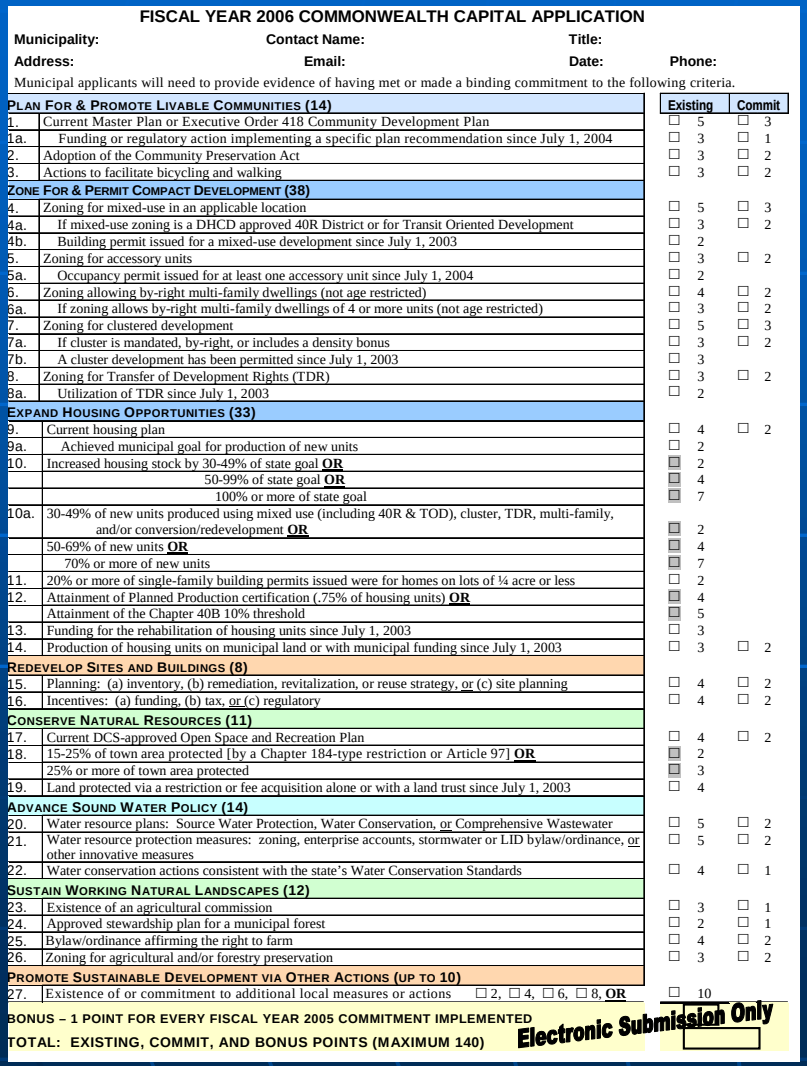
Commonwealth Capital
A New Approach

- **$5 billion in state capital funding** now brought into alignment with a smart growth agenda
- **Coordination = efficiencies**: capital responsibilities shifted from DCR to Highway Department, for example.
- **Fix It First** policy: repair existing infrastructure
- **Transportation plan**: investments in infrastructure predicated on development along transit corridors.

10 Principles of Sustainable Development

- Redevelop first
- Concentrate development
- Be fair
- Restore & enhance the environment
- Conserve natural resources
- Expand housing opportunities
- Provide transportation choices
- Increase job opportunities
- Foster sustainable businesses
- Plan regionally

Commonwealth Capital



FISCAL YEAR 2006 COMMONWEALTH CAPITAL APPLICATION

Municipality: **Contact Name:** **Title:**

Address: **Email:** **Date:** **Phone:**

Municipal applicants will need to provide evidence of having met or made a binding commitment to the following criteria.

		Existing	Commit
PLAN FOR & PROMOTE LIVABLE COMMUNITIES (14)			
1.	Current Master Plan or Executive Order 418 Community Development Plan	☐ 5	☐ 3
1a.	Funding or regulatory action implementing a specific plan recommendation since July 1, 2004	☐ 3	☐ 1
2.	Adoption of the Community Preservation Act	☐ 3	☐ 2
3.	Actions to facilitate bicycling and walking	☐ 3	☐ 2
ZONE FOR & PERMIT COMPACT DEVELOPMENT (38)			
4.	Zoning for mixed-use in an applicable location	☐ 5	☐ 3
4a.	If mixed-use zoning is a DHCD approved 40R District or for Transit Oriented Development	☐ 3	☐ 2
4b.	Building permit issued for a mixed-use development since July 1, 2003	☐ 2	
5.	Zoning for accessory units	☐ 3	☐ 2
5a.	Occupancy permit issued for at least one accessory unit since July 1, 2004	☐ 2	
6.	Zoning allowing by-right multi-family dwellings (not age restricted)	☐ 4	☐ 2
6a.	If zoning allows by-right multi-family dwellings of 4 or more units (not age restricted)	☐ 3	☐ 2
7.	Zoning for clustered development	☐ 5	☐ 3
7a.	If cluster is mandated, by-right, or includes a density bonus	☐ 3	☐ 2
7b.	A cluster development has been permitted since July 1, 2003	☐ 3	
8.	Zoning for Transfer of Development Rights (TDR)	☐ 3	☐ 2
8a.	Utilization of TDR since July 1, 2003	☐ 2	
EXPAND HOUSING OPPORTUNITIES (33)			
9.	Current housing plan	☐ 4	☐ 2
9a.	Achieved municipal goal for production of new units	☐ 2	
10.	Increased housing stock by 30-49% of state goal **OR**	☐ 2	
	50-99% of state goal **OR**	☐ 4	
	100% or more of state goal	☐ 7	
10a.	30-49% of new units produced using mixed use (including 40R & TOD), cluster, TDR, multi-family, and/or conversion/redevelopment **OR**	☐ 2	
	50-69% of new units **OR**	☐ 4	
	70% or more of new units	☐ 7	
11.	20% or more of single-family building permits issued were for homes on lots of ¼ acre or less	☐ 2	
12.	Attainment of Planned Production certification (.75% of housing units) **OR**	☐ 4	
	Attainment of the Chapter 40B 10% threshold	☐ 5	
13.	Funding for the rehabilitation of housing units since July 1, 2003	☐ 3	
14.	Production of housing units on municipal land or with municipal funding since July 1, 2003	☐ 3	☐ 2
REDEVELOP SITES AND BUILDINGS (8)			
15.	Planning: (a) inventory, (b) remediation, revitalization, or reuse strategy, or (c) site planning	☐ 4	☐ 2
16.	Incentives: (a) funding, (b) tax, or (c) regulatory	☐ 4	☐ 2
CONSERVE NATURAL RESOURCES (11)			
17.	Current DCS-approved Open Space and Recreation Plan	☐ 4	☐ 2
18.	15-25% of town area protected [by a Chapter 184-type restriction or Article 97] **OR**	☐ 2	
	25% or more of town area protected	☐ 3	
19.	Land protected via a restriction or fee acquisition alone or with a land trust since July 1, 2003	☐ 4	
ADVANCE SOUND WATER POLICY (14)			
20.	Water resource plans: Source Water Protection, Water Conservation, or Comprehensive Wastewater	☐ 5	☐ 2
21.	Water resource protection measures: zoning, enterprise accounts, stormwater or LID bylaw/ordinance, or other innovative measures	☐ 5	☐ 2
22.	Water conservation actions consistent with the state's Water Conservation Standards	☐ 4	☐ 1
SUSTAIN WORKING NATURAL LANDSCAPES (12)			
23.	Existence of an agricultural commission	☐ 3	☐ 1
24.	Approved stewardship plan for a municipal forest	☐ 2	☐ 1
25.	Bylaw/ordinance affirming the right to farm	☐ 4	☐ 2
26.	Zoning for agricultural and/or forestry preservation	☐ 3	☐ 2
PROMOTE SUSTAINABLE DEVELOPMENT VIA OTHER ACTIONS (UP TO 10)			
27.	Existence of or commitment to additional local measures or actions ☐ 2, ☐ 4, ☐ 6, ☐ 8, **OR**	☐ 10	
BONUS – 1 POINT FOR EVERY FISCAL YEAR 2005 COMMITMENT IMPLEMENTED			
TOTAL: EXISTING, COMMIT, AND BONUS POINTS (MAXIMUM 140)		**Electronic Submission Only**	

- **Screen to determine who gets $500 million in grants and loans each year for infrastructure, parks and other local improvements**
- **Cities and towns check 27 items – initiatives to change zoning, produce low sprawl housing, protect open space and farms - all good for climate!**
- **260 munis have been scored; the more smart growth in place, the higher the score, which puts them at the head of the line for grants**

Scorecard Prioritizes State Investments for Smart Growth Policies

Municipal Policy in 8 Criteria Areas

- Zone for and Permit Compact Development
- Expand Housing Opportunities
- Plan for Livable Communities
- Conserve Natural Resources
- Redevelop Sites and Buildings
- Advance Sound Water Policy
- Sustain Working Resources
- Other Local Actions

Why Are States Acting?

- Sense of urgency; someone has to go first and we can no longer wait for federal action.
- Great exposure to climate risks (State budgets already absorbing early impacts.)
- History of state action prompting national solutions
- Experience in the northeast of working together and leading on environmental/air issues

Now more than ever we need integrated policies

- Transportation Planning and Land Use (& zoning)
- Transportation Technology Regulations
- Coastal Zone Management
- Forestry Management

- Climate Protection
  - Principally CO_2 but also N_2O
  - Methane
  - Black Soot/Carbon
- Air Quality Issues
  - Smog
    - VOCs and NOx
  - Particulates
  - Regional Haze
  - Acid Rain
  - Mercury

Climate Strategy

Transportation

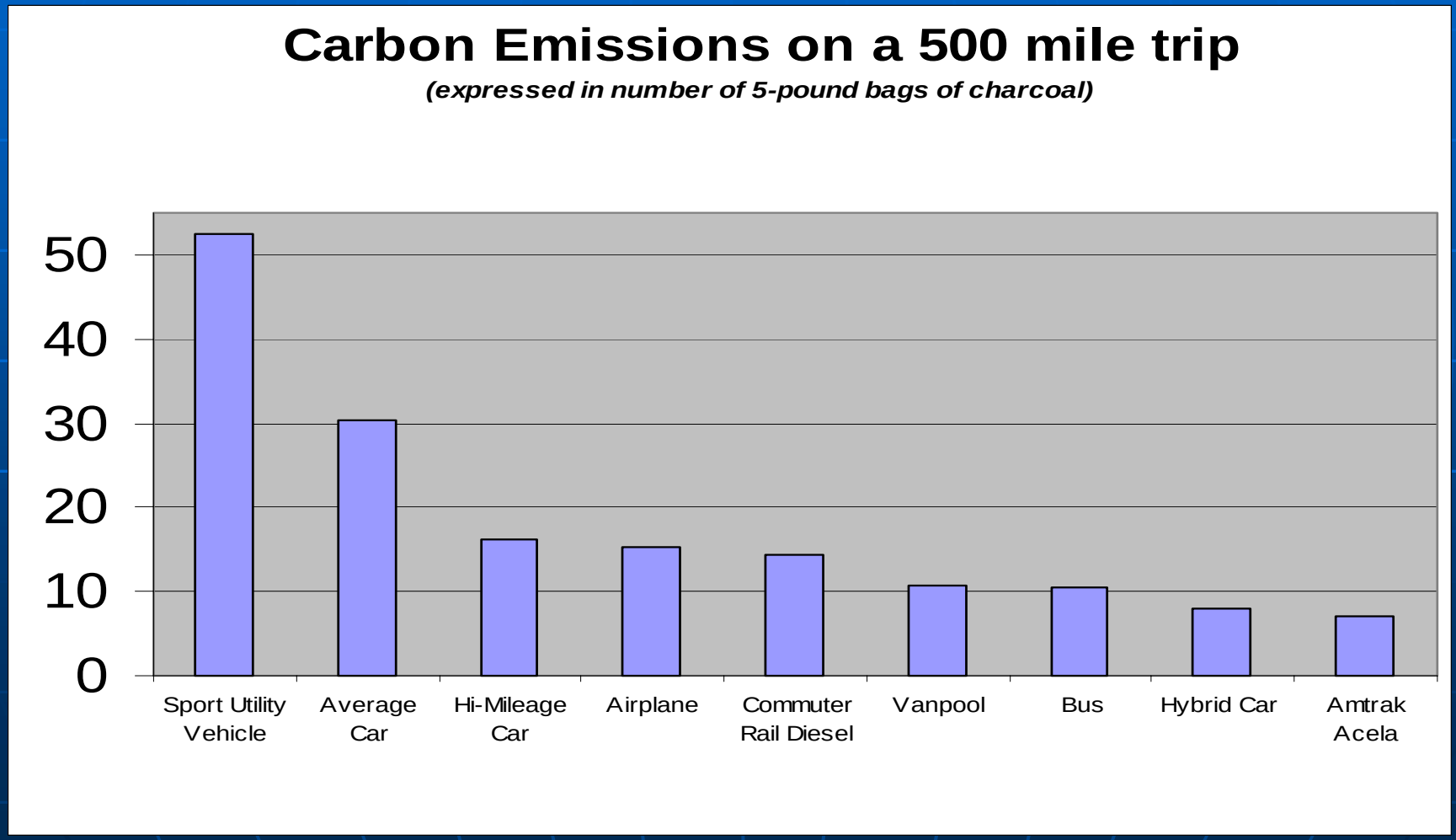
- Smart growth (lower embodied energy)
- Expanded transit system,
- Transit-oriented development
- Vastly improved vehicle efficiency

- Shift to biofuels and hydrogen
- Carbon sequestration

The GHG *Regional* Emission Reduction Goals

- Short-term Goal: Reduce regional GHG emissions to 1990 emissions by 2010.
- Mid-term Goal: Reduce regional GHG emissions by at least 10% below 1990 emissions by 2020.
- Long-term Goal: Reduce regional GHG emissions sufficiently to eliminate any dangerous threat to climate; current science suggests this will require reductions of 75%-85% below current levels.

Comparative CO_2 Emissions by Mode



Travel Demand & Environmental Impact

- 'Toughest nut to crack'
- VMT growth offsets technology & fuel improvements
- Reducing VMT yields multiple benefits
  - Energy, GHG, AQ, open space, congestion, 'livability'
- Increased research and growing knowledge on land use and travel

Energy Efficient Transportation Choices

- Work with Regional Planning Agencies to disclose CO_2 impacts of transportation decision-making.
- Examine Programs that Send a Clearer Price Signal about the Environmental Costs of Driving
- Boost Public Transit Services
- Expand Commuter Choice for State Employees
- Introduce a Demonstration Project to Reduce Household Travel Needs

Improving VMT Efficiency

- Transit Improvements: technology and funding
  - Empty buses are not a good CO2 choice, however.
- Roadway Efficiency and Pricing and real-time decision-making ability
- Car Sharing
- Telecommuting Demonstrations
- Travel Blending

Zoning: changing the DNA of development

- Lifts **outdated prohibitions** on mixed-use, multi-family, accessory apartments, housing over retail
- Concentrates development around **existing infrastructure**, saving money
- **Responds to consumers** who want to walk for simple errands, drive less, spend less money on gas
- Makes the **traditional New England village** legal again

  … and **steers development away** from woods and meadows and farmland

Helping cities and towns make Zoning more Flexible

- Cities and towns are creating new zoning districts that allow greater density, with an affordability component
- Districts in town centers, downtowns, near transit, tend to have lower energy profiles
- Bounty: $3,000 per new home created and up to $600,000 in lump-sum payments.
- 40S: additional state funding to offset costs of educating children new to district

Transit-oriented development

- $30 million TOD bond program to support residential and mixed-use development within a quarter-mile of a transit station
- First $7 million in grants went to Boston, Lynn and Chelsea in March 2006
- Money can be used for housing, parking, bicycle and pedestrian amenities
- More than 25 projects now underway
- Great energy profiles

Energy Efficient Communities are happening all around the state, urban

- Assembly Square, Somerville
- North Point, Cambridge
- Worcester: City Square & Gateway
- Westwood Station, Westwood
- Wonderland, Revere
- Wellington Circle, Medford
- Haverhill, Attleboro downtowns
- Northampton zoning changes

… and suburban/rural

- Westborough: transit village
- South Weymouth Naval Air Station
- Abington: homes near commuter rail
- Canton Center: apartments over retail
- Upton: New Urbanist project on former dump
- Easthampton: transfer of development rights
- Beverly: mandatory cluster bylaw
- Berkshires: right-to-farm bylaws, agricultural commissions
- Carver: legalized accessory apartments, cluster

The work has just begun …

- Maintain the coordination of agencies
- Incorporate Energy into all planning evaluations and MEPA reviews (site and buildings)
- Continue incentives for towns to change zoning
- Increase housing supply in sensible locations
- Maintain the filter of Commonwealth Capital or something similar
- Follow through on the transportation plan

Key to Success: Getting all Agencies to Row in the Same Direction

- Support the Targeting of Capital Funding to Give Priority to Communities who favor Smart Growth Approaches
- Ask the state to put your community at the head of the queue for funding for reducing your emissions!
- Ask for the Tools & Resources to make Smart Growth Happen in your Municipality

Contact Information

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THANK YOU!